

## **VENDOR EVALUATION AND RETENTION MODEL: THE NEED OF THE HOUR FOR INDIAN AGRO-BASED INDUSTRIES**

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### **ABSTRACT**

India is one of the leading agriculture producer in the world. This helped the emergence of many agro-based industries. The scenario has changed when it came to the 21<sup>st</sup> century through many decades from the pre-independence era. Food processing and packaged farm produces retailing, has also become the part of this industrial segment. Decreasing farm produces growth, increasing consumption and multi dimensional expansion of agro-based industries transformed the scene. 'Moving' suppliers / vendors became a great headache for agro-based industries. Ensuring the supply of right quality raw material at right time turned into a difficult task. Emergence of supply chain management (SCM) concept in the late 20<sup>th</sup> century has given new insights into the development of supply chain relations. Some of the organizations came with innovative models, but were not viable for many, since too expensive. The concept of *Vendor Evaluation and Retention Model* provides a solution to this. This model is based on three basic pillars, viz, vendor sourcing, vendor re-evaluation and vendor retention. Though the basic concepts remain unchanged, some fine tuning is suggested in line with the demand with respect to agro-based industries. Healthy inbound supply chain through excellent vendor-supply relation can create wonders to the organization and in turn value addition to the customers and contribution to the economic growth.

**KEYWORDS:** Supply Chain Management, Vendor Evaluation, Vendor Sourcing, Vendor Re-Evaluation, Vendor Retention, Agro-Based Industries

### **INTRODUCTION**

Supply Chain Management is a comparatively young and vibrant subject. Nowadays, most organisations globally look forward to improve their supply chain for competitive excellence. During the past few decades India has developed into an emerging economy thanks to various political and socio-economical factors. Agriculture is still the back bone of our country and agro-based industries acts as a boost to this sector. Increased competition has forced agro-based industry also to adopt good supply chain practices. As most of these organisations are in the small or medium (MSME) category, implementation of hi-tech SCM systems may not be affordable to many as done by the Western counterparts or even by the Indian corporates.

This necessitates the relevance of certain viable solutions in the supply chain domain. *Vendor Evaluation and Retention Model* (VE&R Model) is the best solution which can be implemented with almost zero additional cost. This is a continuous, systematic and interactive process and can be implemented in any industry. Not many studies were undergone

in Indian context in this area. This paper tries to describe the relevance of this model with respect to Indian agro-based industries. It also depicts various points to be looked into during the implementation of a strategic vendor management system.

## INDIAN AGRICULTURE DOMAIN

India is the world's second largest manufacturer of agriculture produces next to China. It has a credit as the largest producer of milk, sugarcane and tea, as well as the second largest producer of rice, wheat, fruits, and vegetables (SEA Handbook-2014). India's total geographical area is 328.7 million hectares, of which 141 million hectares is the net sown area, while 190 million hectares is the gross cropped area ([www.business.gov.in/agriculture](http://www.business.gov.in/agriculture)). Nearly 70% of the population depends on agriculture and agro-based industries. Around 51% of India's geographical area is under cultivation as compared to 11% of the world average ([www.icar.org.in](http://www.icar.org.in)).

## AGRO-BASED INDUSTRIES

Agro-based industries are those industries which depend on agricultural products as raw materials. India stepped up into the industrial era during the British colonial period by setting up agro based manufacturing units. Cotton Mills, Jute Mills and Sugar Mills were the synonyms of industry during that period. Now the agro-based industry has major significance in Indian economy as it provides employment for 35 million people (second largest after agriculture) and contributes 14% to the total industrial production and 4% to the GDP ([www.cii.in](http://www.cii.in)).

Since the focus was more on infrastructure industries during the post independence period, agro-based industries lost the earlier momentum. In 1980s the situation started improving with the emergence of processed food industry. 21<sup>st</sup> century has witnessed the progress of industry into new spheres. At present the agro-based industries range from small village units to medium & large scale manufacturing plants.

Based on the dependency of agri-commodities, agro based industries shall be categorized as follows:

### Primary Industries

Primary industries directly depend on farm produces.

Eg: Sugar Industry, Fruit Juice & Pulp Industry

### Secondary Industries

These industries fully or partially depends primary industries for its raw material requirement.

Eg: Biscuit Industry (which sources *maida* from Flour Mills and sugar from Sugar Mills)

### Tertiary Industries

These are the next in the line. Tertiary industry usually uses a mix of direct farm produces and out puts of primary industry or secondary industry as its raw materials.

Eg: Feed Industry (which use Maize, Rice Bran and De Oiled Cakes as major raw materials)

## CHANGING SCENARIO

Indian agricultural arena had changed drastically during the past two decades. Usage of fertilizers and

mechanization under green revolution had improved agriculture output during 70s and 80s, but its impact was reduced significantly towards the end of 20<sup>th</sup> century. Biologically or genetically modified crops to increase the yield were not well accepted by Indian farming community. Ex: The yield of GM corn used in US, Brazil and Argentina is over 5 MT per hectare, while in India non-GM crop yields 2.4 MT only (Business Line, 08/08/2014). All these resulted in dip in the farm output growth. The average growth rate of agriculture in India is around 3.5% which is very much inappropriate to a country with around 130 Crore population. Share of agriculture to India's GDP dipped below 14% in 2013 (Vision 2025-Indian Vegetable Oil Industry & Trade).

Usage of agriculture produces in India increased many fold during these period on account of

- Increase in population and corresponding rise in consumption
- Greater demand as fodder for livestock
- Emergence of bio-fuel as an alternative fuel source

Dominance of processed foods in our food habit has thrown an open entry for setting up of many units in this industrial segment during the last three decades. Retail revolution in early 21<sup>st</sup> century has stimulated movement of farm products in packaged form through organized sector. Processed food industry and farm product retailing industry changed the agri-procurement domain. Extend of competition among the individual firms became huge. For the survival, they were forced to adopt cost effective supply chain mechanism and procurement methods.

## **SUPPLY CHAIN MANAGEMENT**

Supply Chain Management is a set of approaches utilized too efficiently to integrate supplier, manufacturer, warehouses and stores so that goods are produced and distributed at right quantities, to the right location and at the right time, in order to minimize system under costs while satisfying the service level requirements (Designing and Managing the Supply Chain, Levi-2000) Inbound supply chain is the area which deals inward movement of raw materials and other essentials from the source through various networks to manufacturing facility.

As manufacturing entities strive to focus on core competencies and become more flexible, they have reduced their ownership of raw materials sources and distribution channels. These functions are increasingly being outsourced to other firms that can perform the activities better or more cost effectively. The effect has been to increase the number of companies involved in satisfying consumer demand, while reducing management control of daily logistics operations. Less control over the raw materials and more supply chain partners led to the creation of supply chain management concepts also in agro-based industries.

## **INBOUND SUPPLY CHAIN CHALLENGES**

Indian agro based industries face procurement challenges in two fronts

- Logistics Management
- Vendor Management

India is a vast country with climatic differences. Diversity of the crop is very obvious. The farm outputs have to be moved from one place to another, even thousands of kilometers. Hence, logistics play a major role in agribusiness.

Seasonality and perishability of the farm produces and its huge volume in most cases are other logistics challenges. Here more roles are for control mechanism rather than the strategic management.

A vendor or a supplier is a supply chain management term which means anyone who provides goods or services to a company (Logistical Management- The Integrated Supply Chain Process, Bowersox, Closs). In Indian system, a vendor may be a manufacturer, distributor, trader or a broker. The purpose of supply chain management is to improve trust and collaboration among supply chain partners, thus improving inventory visibility and improving inventory velocity.

The success of world's prominent agro-based companies is attributed to their supply chain relations with vendors. Mc Donalds India's spending of 6 years and around Rs. 450 crore to set up the food supply chain even before opening its first restaurant in the country and the e-choupal model of ITC Ltd. for rural sourcing are the classical examples for strong inbound supply chain. These are all innovative models though may not be possible for many organizations.

Indian vendors are very conventional and are not much willing to accept modern management practices. It is quite difficult to build a strong supply chain with them as they usually prefer temporary benefits rather than opting a long term relation and gains out of it. Here comes the relevance of a strong and strategic vendor management system.

## **VENDOR EVALUATION AND RETENTION MODEL**

The model envisages following sequential activities:

- Vendor Sourcing
- Vendor Re-Evaluation
- Vendor Retention

### **Vendor Sourcing**

Sourcing refers to selecting a vendor, engineering and configuring products along with the vendors. Main objective of sourcing is either to reduce the cost or increase the value of products or services required by the business (Materials Management- An Integrated Approach, Gopalakrishnan P.).

Vendor sourcing is a continuous task. It actually comprises of three functional activities:

- Vendor Search
- Vendor pre-evaluation
- Vendor Selection

For many industries searching a vendor is not a big task nowadays, thanks to the internet facility. Business directories, vendor databank, individual websites, etc. are available with regards to any product. But this is not applicable to many agro-based industries. A large chunk of their vendors are still illiterate rural people who are not near the technology realm. Hence, even today sourcing and short listing of suitable vendors is a herculean task before agro-based industries.

Vendor evaluation (also called pre-evaluation) can be possible by collecting the record of earlier supplies of similar items made to various purchasers. In normal course, the purchasing organisation would evaluate the vendors based

on a number of criteria that they had decided upon which may include objective criteria such as price and warranty and subjective data which would include past experience with the vendor. Based on the weightage given to these criteria the purchasing department would be able to fairly evaluate each vendor.

In agro-based industries, either credibility, reputation, serviceability etc of the vendors are collected from the market as well as from other manufacturers or the samples are collected from these vendors for qualitative evaluation of specified parameters. Both the system is having its own limitations.

It is quite difficult to obtain track records of the suppliers. Most of these vendors are not the part of an organized system. There are numerous intermediaries in today's Indian agriculture sphere, who shift from one operation to another or from one area to another. Brokers are the prominent linking factors between a supplier and a purchaser.

Collecting samples for evaluation is also having a limited impact in the industry under reference. The samples are usually based on a particular crop and its impact is crucial on the samples of primary, secondary or tertiary industries. Crop to crop, area to area and/or season to season aberrations are very obvious in the case of agri-produces. In this context, with a onetime sample based conclusion about a vendor may be less conclusive.

Here comes the role of *vendor inspection* besides the earlier mentioned practices. Premises of the vendors have to be visited for conducting evaluation periodically. Along with understanding the supplier and raw material, this system will provide insights on prevailing market condition. Even though, this is an expensive method, proper scheduling of the process can make it beneficial. Such evaluation visits can be used to find out nearby new vendor sources and thus the vendor base can be developed.

Based on the evaluation vendors are selected and these selected vendors or evaluated vendors are real assets of the particular organization.

### **Vendor Re-Evaluation**

Vendor re-evaluation is also called as *post-supply evaluation*. As the name implies this is the evaluation of various aspects of a supply after its completion. This has two major steps, viz,

- Vendor Rating
- Vendor Grading

Vendors or suppliers are given standing, status, or title according to their attainment of some level of performance, such as delivery, lead time, quality, price, or some combination of variables is known as vendor rating. In a vendor rating, individual ratings are weighed according to its importance, and pooled to arrive at an overall vendor rating. The process can be somewhat complex in that many factors can be complementary or conflicting. The process is further complicated by fact that some factors are quantitatively measured and others subjectively. Vendor rating helps to minimize subjectivity in judgment and make it possible to consider all relevant criteria in assessing suppliers.

The common mistake committed in a vendor rating system at agro-based industries is giving excessive weightage on price factor as done in most other industries. Being the agricultural commodity, almost all its raw materials are subjected to frequent rate fluctuation. Hence, for a longtime-scale rating, price cannot be taken as parameter for evaluation. It is better to independently evaluate the price factor time to time with the spot market rates.

Quality factor is to be set as the main parameter for the rating since lot of adulteration can be possible in the supplies of agri-commodities. Inferior produces on account of various accidental factors like climatic issues etc. are also probable. Timely delivery of the ordered item is the next factor to be taken into account. Any delay may hamper total supply chain system. Quantum of supply against the ordered quantity and ease of the service from the vendor are the other factors to be considered for this purpose.

For a model vendor rating system in agro-based industries the different parameters can be rated as follows. Optimal minimum variations subjected to the industry nature and raw material used is also recommended.

**Table 1**

Parameter	Maximum Rate
Quality	60
Delivery	20
Quantity	10
Service	10
<b>Total</b>	<b>100</b>

Quality Rate (QLR): The quality rate is calculated with the help of the formulae:

$$QLR = [100 - (\text{Inferior quantity received} / \text{Total received quantity})] \times 60 \quad (1)$$

Delivery Rate (DLR): The delivery rate is calculated with the help of the formulae:

$$DLR = (\text{Quantity Received within the stipulated Schedule} / \text{Total Quantity Received}) \times 20 \quad (2)$$

Quantity Rate (QTR): The quantity rate is calculated with the help of formulae:

$$QTR = (\text{Quantity Received} / \text{Total Quantity Ordered}) \times 10 \quad (3)$$

#### **Service Rate (SVR)**

The vendors are rated in service point of view with respect to the parameters like follow ups required to get the ordered material, response to the communication & needs and service rendered by the supplier. Based on the above, serviceability is categorised into three:

Excellent: 100 %

Fair: 80 %

Poor: 60 %

Rating without much deviation is suggested here to reduce the influence of a subjective factor on the overall rating.

The service rate is calculated with the help of the formulae:

$$SVR = (\text{Serviceability in Percentage}) \times 10 \quad (4)$$

Total Composite Rate (TCR): It is calculated by adding all the four-parameter rates:

$$TCR = (QLR + DLR + QTR + SVR) \quad (5)$$

Based on the TCR, vendors are graded as A, B, & C or excellent, good, fair & poor etc. This is known as grading. Vendors having top class grading has to be considered as *qualified vendors*. The point to be noted after the grading is that lower grading against one time supply should not be treated as a reason for disqualification unless and otherwise serious mistakes have been committed by the vendor. In normal course, a few more chances may be given to the lower graded vendors. This consideration is necessitated since agri-commodities are subjected frequent quality fluctuations on account of many uncontrollable reasons. Vendors who are getting lower grades during the consecutive period have to be permanently disqualified.

### Vendor Retention

Vendor retention is a continuous and two way process. Buyer should be satisfied with vendor's performance in terms of quality and service provided by them. At the same time a vendor should be satisfied in terms of buyer's payments, quality report, feedback, order schedules etc. Buyers' satisfaction shall be ascertained using the pre-evaluation and re-evaluation of vendors. This should be properly intimated to the vendors from time to time, which will definitely be helpful in boosting the self esteem of the vendors and in turn the supply chain bondage.

Supplier satisfaction is defined as a supplier's feeling of fairness with regard to buyer's incentives and supplier's contributions within an industrial buyer-seller relationship. In the past, supplier satisfaction has not been a major topic of interest within purchasing and industrial management from either a practitioner or an academic point of view.

With the help of a tailor made questionnaire focusing vendors, satisfaction level of vendors can be obtained. The questionnaire shall cover almost all relevant area. The responses against each question shall be rated on a three, four or five-point continuum, as required. The response points of suppliers against each question is summed up and with the total point, percentage of supplier satisfaction is calculated as follows:

$$\% \text{ of SS} = \frac{\text{Rates Scored by Particular Supplier}}{\text{Max. Rates for all Questions}} \times 100 \quad (6)$$

*Max. Rates for all Questions*

Supplier Satisfaction Index (SSI) indicating satisfaction level of all suppliers will help to assess at what extend the organization is vendor friendly:

$$SSI = \frac{\sum_{i=1}^n \text{Marks scored by particular Supplier}}{\text{Max. Marks for all Questions}} \times 100 \quad (7)$$

*Max. Marks for all Questions*

Supplier Satisfaction Index can be rated as given in the table.

Being the case of agro-based industries, the questionnaire should not carry too many questions or jargons. It should be simple, but reasonable. Then only the vendors like farmers or small traders can be able to understand and respond.

Table 2

SSI %	Grading
Above 80	Excellent
70- 80	Good
60-70	Average
Below 60	Poor

Once the organisation found that any of the suppliers are dissatisfied, it is a must to understand the cause and most appropriate strategies for raising supplier satisfaction should be adopted.

If the organization is satisfied with vendors performance after evaluation and vendor is pleased with the organisation's approach it is quite easy to retain the vendor.

## **BENEFITS OF VE & R MODEL**

The nut shell of the benefits of the model includes:

- Helping minimize subjectivity in judgment and make it possible to consider all relevant criteria in assessing suppliers.
- Providing feedback from all areas in one package.
- Facilitating better communication with vendors.
- Providing overall control of the vendor base.
- Requiring specific action to correct identified performance weaknesses.
- Establishing continuous review standards for vendors, thus ensuring continuous improvement of vendor performance.
- Building vendor partnerships, especially with suppliers having strategic links.
- Developing a performance-based culture.

## **CONCLUSIONS**

Indian agro-based industry is still spreading its wings into new spheres. It ranges from age old sugar and cotton industry to dairy, spice extraction, fruit processing, edible oil, tea & coffee manufacturing, coir products, processed foods and retail industries. Retaining a vendor is a nightmare in the case of many agro-based industries. Strong inbound supply chain is a necessity in today's competitive world to ensure uninterrupted supply of quality raw materials. Here comes the relevance of VE&R model. This is a least expensive, at the same time highly vibrant system that can be easily be implemented. The scope of the model is not limited to the agro-based industry. It can be used in any industry with required adaptation.

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